

Cassell

M E M O R A N D U M

June 25, 1986
C1-E84-FA-86-0975

TO: K. A. HAZER, H114/HQ/65
FROM: M. A. DANFORTH, C1-E84
SUBJECT: DAC PROCESS TANK MIXTURES

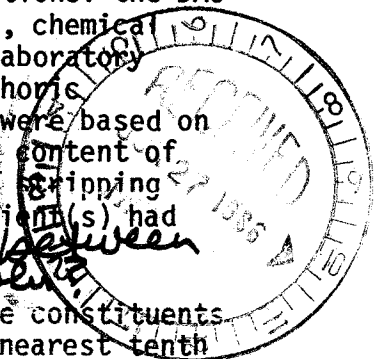
COPIES TO: H. L. Cook, C1-121 (126-14); W. E. Emens, C1-824 (28-10);
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(C6-31); J. A. McGrew, C1-E84 (36-90); T. J. Yarbrough, C1-349 (73-40); File

ENCLOSURES: Memo number H114-832 dated 27 March 1986

The following information is provided in response to the reference memo:

1. All production process tank mixtures at DAC Long Beach (C1) and Torrance (C6) are listed in "DAC Process Tank Locations." This list is published by Quality Assurance and the latest issue is 12/02/85. About 150 process tanks in the list require calculations of weight percentages of constituents or need information to be filled in.
2. Occupational Safety, C1-121, has provided us with many of the needed supplier-furnished MSDS's and is endeavoring to provide us with more. Several supplier-furnished MSDS's are vague or incomplete.
3. Several sources of data were used to make the calculations: the DAC Process Tank Location books Douglas Process Standards, chemical handbooks, and supplier-furnished MSDS's. Only one laboratory analysis was performed: the lead content in the phosphoric anodizing tank (C1, Tank #537). Most of the results were based on assuming "worst case" values. For example, the metal content of strip tanks was calculated on the assumption that the stripping reaction had gone to completion and the active ingredient(s) had been completely used up. *How about range between orig. soln + spent soln?*
4. Weight percentages were calculated for solutions whose constituents are known to us. Concentrations are reported to the nearest tenth of a percent, except for especially hazardous compounds in small concentrations. Whenever a range of concentrations was supplied, we made calculations based on the maximum concentration, except in the case where the total would be more than 100 percent. In that case the percentages were normalized to a total of 100 percent.

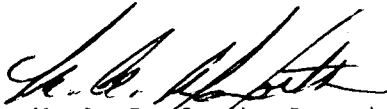
*Engel
has
provided
copies of
profile
analyses
he did.*



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5. Please note that this is an incomplete submittal of data. We are sending you what we have now, so you can begin the preparation of your MSDS's. As we receive additional information, we will make the calculations and send the results to you.



M. A. Danforth, Branch Manager
Nonmetallic Materials & Processes
Materials Laboratories
Airframe Technologies

PROCESS TANKS AT LONG BEACH (C1)

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
207	9.49	2561	<u>PHOTO RESIST DYE</u> Xylene (C ₈ H ₁₀) Benzaldehyde (C ₇ H ₆ O) Ethylene glycol monoethyl ether (C ₄ H ₁₀ O ₂)	94 3 3
208A	9.49	2560	<u>PHOTO RESIST DEVELOPER</u> Xylene (C ₈ H ₁₀) Ethylene glycol monomethyl ether acetate (C ₅ H ₁₀ O ₃)	78 22
213	9.49	2562	<u>STAINLESS STEEL ETCHANT</u> Ferric chloride (FeCl ₃)	39.3
214	9.49	939 2562 2657	<u>ETCHANT</u> Hydrochloric acid (HCl) Ferric chloride (FeCl ₃) Copper carbonate (Cu ₂ (OH) ₂ CO ₃)	1.1 16.8 0.8
216	9.316 9.60	3398	<u>OAKITE DP STRIPPER</u>	Need More detailed MSDS
218A		957	<u>ETCHANT</u> Sodium hydroxide (NaOH)	5.8
219	9.49	2559-1	<u>SENSITIZER</u> Monochlorobenzene (C ₆ H ₅ Cl)	Need MSDS
220			<u>RESIST COATING</u> Xylene [KMER] (C ₈ H ₁₀)	Need MSDS
224A		957	<u>ETCHANT</u>	Same as Tank 218A
225A		957	<u>ETCHANT</u>	Same as Tank 218A
226			<u>ANODIC SEAL-M5A5G</u>	Need MSDS
233			<u>ENTHONE 5-61 CLEANER</u>	Need MSDS
235			<u>ENDOX STRIPPER</u>	Need MSDS
260	9.301 (TYP.)	980	<u>ALUMINUM ALKALINE CLEANER</u> <u>TURCO 4090 CLEANER</u>	Need MSDS

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
262	9.301	948 935 5466	<u>1051 ETCH</u> Nitric acid (HNO ₃) Chromic acid (CrO ₃) Hydrofluoric acid (HF) Dissolved aluminum (Al ⁺³)	10.7 5.3 0.8 15.0
264	9.49		<u>ETCHANT</u>	Same as Tank 214
267	9.301		<u>1051 ETCH</u>	Same as Tank 262
268	9.45	1453	<u>ALODINE 1200 CONVERSION COATING</u> Chromic acid (CrO ₃) Sodium fluoborate (NaBF ₄) Potassium ferricyanide (K ₃ Fe(CN) ₆) Potassium hexafluozirconate (K ₂ ZrF ₆)	1.0 0.5 0.4 0.2
270	9.45	5089	<u>ALODINE 1500 CONVERSION COATING</u>	Need more detailed MSDS
303	9.69	961 948 939	<u>COPPER BRIGHT DIP</u> Sulfuric acid (H ₂ SO ₄) Nitric acid (HNO ₃) Hydrochloric acid (HCl) Dissolved copper (Cu ⁺²)	67.5 18.9 0.04 13.5
305	9.28 9.74	926	<u>CADMIUM STRIP</u> Ammonium nitrate (NH ₄ NO ₃) Dissolved cadmium (Cd ⁺²)	11.4 8.0
308	9.05 (TYP.)	982	<u>Wyandotte FS ELECTROCLEANER</u>	Need more detailed MSDS
309	9.74	939	<u>ACID DIP</u> Hydrochloric acid (HCl)	10.4
311	9.28 9.74	955	<u>CYANIDE DIP</u> Sodium cyanide (NaCN)	4.4
312	9.28	932 955 954 957	<u>CADMIUM PLATE (NONBRIGHT)</u> Cadmium oxide (CdO) Sodium cyanide (NaCN) Sodium carbonate (Na ₂ CO ₃) Sodium hydroxide (NaOH)	3.6 10.6 5.3 2.1

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
313	9.74		<u>CADMIUM PLATE (BRIGHT)</u>	
		932	Cadmium oxide (CdO)	3.6
		955	Sodium cyanide (NaCN)	13.3
		954	Sodium carbonate (Na ₂ CO ₃)	5.3
		957	Sodium hydroxide (NaOH)	2.1
314	9.74	2298	<u>CHROMATE DIP</u>	Need more
		2298-1	<u>Iridite #1</u>	detailed MSDS
315	9.74		<u>NEUTRALIZING RINSE</u>	
		935	Chromic acid (CrO ₃)	9.3
		961	Sulfuric acid (H ₂ SO ₄)	0.3
316	9.69		<u>COPPER PLATE</u>	
		1817	Rochelle salt (KNaC ₄ H ₄ O ₆ ·4H ₂ O)	3.8
		950-28	Copper cyanide (CuCN)	4.4
		955	Sodium cyanide (NaCN)	5.5
		957	Sodium hydroxide (NaOH)	0.5
		954	Sodium carbonate (Na ₂ CO ₃)	1.1
319	9.28		<u>NEUTRALIZING RINSE</u>	
		935	Chromic acid (CrO ₃)	7.2
320B			<u>NITRIC ACID DIP</u>	
		948	Nitric acid (HNO ₃)	2.9
321	9.69	5785	<u>COPPER STRIPPER</u>	Need more
			Enthone "A" copper strip	detailed MSDS
327	3.317 (TYP.)	673	<u>FINGERPRINT NEUTRALIZER</u>	
			Amino-2-meth-2 propanol (C ₄ H ₁₁ ON)	4.0
			Methyl amyl alcohol (C ₆ H ₁₄ O)	30.0
			Stoddard Solvent (SEE TANK #1201)	66.0
329	5.00-6	1604	<u>HOUGHTON DRAW TEMPERATURE 275</u>	Need MSDS
331	5.00-6	950-8	<u>HEAT TREAT SALT</u>	Need more
				detailed MSDS
332	5.00-6	5747	<u>HOUGHTON LIQUID HEAT 168</u>	Need MSDS
333	5.00-1 5.00-11	329	<u>HOUGHTON #2 QUENCH OIL</u>	Need MSDS
334	5.00-1 5.00-11	329	<u>HOUGHTON #2 QUENCH OIL</u>	Need MSDS

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
336			<u>TURCO 4829-LT ALK. CLEANER</u>	Need MSDS
336-1	5.00-1 5.00-11	329	<u>HOUGHTON #2 QUENCH OIL</u>	Need MSDS
343		5788 939	<u>NICKEL STRIKE</u> Nickel chloride ($\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$) Hydrochloric acid (HCl)	20.6 7.5
350		980	<u>TURCO 4090</u>	Same as Tank 260
353	9.301		<u>ALUMINUM ETCHANT</u>	Same as Tank 262
358		935	<u>DOW STRIPPER</u> Chromic acid (CrO_3)	9.4
359	9.41	946	<u>WYANDOTTE MF ETCHANT</u> Ammonium bifluoride (NH_4HF_2)	5.0
361		956	<u>DOW #7 PROCESS</u> Sodium dichromate ($\text{Na}_2\text{Cr}_2\text{O}_7$)	18.0
363	9.45	5089	<u>ALODINE 1500</u>	Same as Tank 270
365	9.45	1453	<u>ALODINE 1200</u>	Same as Tank 268
368	11.01 (TYP.)	956-1	<u>ANODIC SEAL</u> Potassium dichromate ($\text{K}_2\text{Cr}_2\text{O}_7$)	5.8
370	11.01	935	<u>ANODIZE</u> Chromic acid (CrO_3)	3.0
376			<u>QUENCH</u> Perchloroethylene (C_2Cl_4) Stoddard Solvent (SEE TANK #1201)	47.2 52.8
393	9.07	948	<u>PASSIVATION</u> Nitric acid (HNO_3) Metal oxides	21.1 <1.0
401		980	<u>ALUMINUM ALKALINE CLEANER</u> Sodium carbonate (Na_2CO_3) Sodium silicate (Na_2SiO_3)	Need more detailed MSDS

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
402		980	<u>ALUMINUM ALKALINE</u> Sodium carbonate (Na_2CO_3) Sodium silicate (Na_2SiO_3)	Same as Tank 401
405	9.301		<u>1051 ETCH</u>	Same as Tank 262
407	9.45	5089	<u>ALODINE 1500</u>	Same as Tank 270
412		460	<u>ZINC CHROMATE PRIMER</u>	Need MSDS
413	9.316 9.60	3398	<u>OAKITE DP STRIPPER</u>	Same as Tank 216
416	9.45	1453	<u>ALODINE 1200</u>	Same as Tank 268
418		5852	<u>TURCO 4215 CLEANER</u>	Need more detailed MSDS
419		5852	<u>TURCO 4215 CLEANER</u>	Same as Tank 418
421			<u>1051 ETCH</u>	Same as Tank 262
424	9.45	5089	<u>ALODINE 1500</u>	Same as Tank 270
446	9.316-1	5376-1	<u>KOLENE LTS STRIPPER</u>	Need more detailed MSDS
453	9.45	1453	<u>ALODINE 1200</u>	Same as Tank 268
455		961 935 5466	<u>ALUMINUM ETCHANT</u> Sulfuric acid (H_2SO_4) Chromic acid (CrO_3) Hydrofluoric acid (HF)	17.7 4.9 0.7
456		5609	<u>SPOTWELD ETCH</u> Sodium gluconate ($\text{NaC}_6\text{H}_{11}\text{O}_7$) Sodium bisulfate (NaHSO_4) Sodium nitrate (NaNO_3) Sodium silicofluoride (Na_2SiF_6)	Need Sp. Gr.
458		935 5610	<u>SPOTWELD FIXANT</u> Chromic acid (CrO_3) Alkalume fixant	3.1 0.88 (Need MSDS)

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
460	9.301 (TYP.)	6064	<u>TURCO AIRLION</u>	Need more detailed MSDS
473		3398	<u>PAINT STRIPPER</u>	Need more detailed MSDS
474	9.316 9.60	3398	<u>PAINT STRIPPER</u> Oakite DP	Same as Tank 216
475	9.316	935	<u>PAINT STRIPPER</u> Chromic acid (CrO ₃)	31.3
476	9.316	935	<u>PAINT STRIPPER</u> Chromic acid (CrO ₃)	31.3
483	9.29	948 5466 5454	<u>TITANIUM PICKLE</u> Nitric acid (HNO ₃) Hydrofluoric acid (HF) Activol Dissolved titanium (Ti ⁺⁴)	46.2 4.9 Need more detailed MSDS 0.2
485	9.07	948 5466	<u>NITROPICKLE</u> Nitric acid (HNO ₃) Hydrofluoric acid (HF) Metal oxides	19.3 3.4
488	9.07	948	<u>PASSIVATION</u> Nitric acid (HNO ₃) Metal oxides	44.9
490	9.07	3285	<u>TURCO HTC ALK. CLEANER</u>	Need more detailed MSDS
501	4.404	2776-5 2776-6	<u>TURCO 4215 LT CLEANER</u>	Need more detailed MSDS
503	4.404	2776-5 2776-6	<u>TURCO 4215 LT CLEANER</u>	Same as Tank 501
505	4.404	948 935 961 5466	<u>DEOXIDIZER ETCH</u> Nitric acid (HNO ₃) Chromic acid (CrO ₃) Sulfuric acid (H ₂ SO ₄) Hydrofluoric acid (HF)	8.3 9.0 8.1 3.0
507	4.404	5894	<u>TURCOAT 4354 CONV. COATING</u>	Need more detailed MSDS

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
511		DMS 1908	<u>FLUORESCENT PENETRANT</u>	Need more detailed MSDS
530	9.301	5852	<u>ALUMINUM ALKALINE CLEANER</u> Turco 4215S	Need more detailed MSDS
		2776-1	Additive	Need MSDS
534	11.01		<u>ANODIZE</u>	Same as Tank 370
535	11.01		<u>ANODIC SEAL</u>	Same as Tank 368
537		951	<u>PHOSPHORIC ACID ANODIZE</u> Phosphoric acid (H_3PO_4) Dissolved lead (Pb^{+2})	9.6 0.01
538	9.45	5089	<u>ALODINE 1500 CONVERSION COATING</u>	Same as Tank 270
541	9.30		<u>1051 ETCH</u>	Same as Tank 262
545			<u>CORROSION PREVENTIVE</u>	Need more detailed MSDS
		667-1	Petrotect Amber Stoddard Solvent (SEE TANK #1201)	58.5
546			<u>MOLTEN SOLDER</u> Tin (Sn) Lead (Pb)	63.0 37.0
560		DMS 1908	<u>FLUORESCENT PENETRANT</u>	Same as Tank 511
601	9.07		<u>PASSIVATION</u>	Same as Tank 393
603	9.07		<u>NITROPICKLE</u>	Same as Tank 485
610	1.33 3.08 7.00-1	5735-1	<u>QUENCH-SOLVENE</u> Perchloroethylene (C_2Cl_4) Stoddard Solvent (SEE TANK #1201)	Need MSDS 47.2 52.8
660	9.07 9.29 9.483	3285	<u>TURCO ALKALINE CLEANER</u> Sodium hydroxide (NaOH) Sodium silicate (Na_2SiO_3)	Need MSDS 1.3 2.8

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
663	9.29		<u>TITANIUM PICKLE</u>	Same as Tank 483
664	9.483		<u>TITANIUM CHEM. MILL</u>	
		9.48	Nitric acid (HNO ₃)	10.9
		5466	Hydrofluoric acid (HF)	4.2
		509	Butyl Cellosolve (C ₆ H ₁₄ O ₂)	3.2
		2500	Sodium lauryl sulfate (NaC ₁₂ H ₂₅ SO ₄)	0.2
			Dissolved titanium (Ti ⁺⁴)	2.5
668	9.07 9.19 9.29	5094-1	<u>HOT KOLENE DESCALE</u>	MSDS does not reveal composition
1201	9.301 (TYP.)	518	<u>SOLVENT WASH</u> Stoddard Solvent:	
			Medium aliphatic petroleum solvent	85.0
			Heavy aromatic petroleum solvent	15.0
1600	9.481-1		<u>CHEM. MILL MASKANT</u>	
		6063	Adcoat 814C-32	Need MSDS
			Adcoat 814C thinner	Need MSDS
3701	2510-1 (TYP.)		<u>FUEL TANK COATING</u>	
		842-3	EC-776	Need more
			Methyl isobutyl ketone (C ₆ H ₁₂ O)	detailed MSDS 19.0
4002	10.901		<u>DIP BRAZE SALT POT</u>	
		5412	Aluminum dip brazing salt	Need MSDS
4005	9.07 (TYP.)		<u>CLEANER</u>	
		957	Sodium hydroxide (NaOH)	5.8
4010-1	10.914 10.914-1		<u>ELECTROPOLISH</u>	
		1924-1	Electropolishing electrolyte	Need MSDS
5200	9.301 (TYP.)	518	<u>SOLVENT WASH</u>	Same as Tank 1201
5201	1.22 (TYP.)		<u>CORROSION PREVENTIVE</u>	Same as Tank 545
		667-1		
5203	3.317 (TYP.)	673	<u>FINGERPRINT NEUTRALIZER</u>	Same as Tank 327
5204	9.301 (TYP.)	518	<u>SOLVENT WASH</u>	Same as Tank 1201

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
5205	1.151-2 (TYP.)	392	<u>HYDRAULIC PRESERVATIVE</u> <u>Hydraulic Oil, MIL-H-6083</u>	Need more detailed MSDS
5206	3.317 (TYP.)	670	<u>CORROSION PREVENTIVE</u> <u>Lubricant Oil, MIL-C-6529</u>	Need MSDS
5209	4.713 4.738-2	5961	<u>ULTRASONIC INSPECTION TANK</u> <u>Corrosion inhibitor</u> (Benzotriazole (C ₇ H ₅ SN))	Need MSDS
8001	9.301 (TYP.)		<u>SOLVENT WASH</u>	Same as Tank 1201
8401	9.301 (TYP.)		<u>SOLVENT WASH</u>	Same as Tank 1201
WWR-1	9.301 (TYP.)	5278	<u>ALKALINE CLEANER</u> <u>Waterbase cleaner</u>	Need MSDS
WWR-2	9.301 (TYP.)	5278	<u>ALKALINE CLEANER</u> <u>Waterbase cleaner</u>	Need MSDS
WWR-3	9.301 (TYP.)		<u>SOLVENT WASH</u>	Same as Tank 1201
WWR-4	9.301 (TYP.)	5278	<u>ALKALINE CLEANER</u>	Same as Tank WWR-1
WWR-5	9.312 9.316	5901	<u>TEMPORARY COATING REMOVER</u> <u>Alkaline remover</u>	Need more detailed MSDS

PROCESS TANKS AT TORRANCE (C6)

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
1	9.301 (TYP.)	980	<u>ALUMINUM ALKALINE CLEANER</u>	Same as Tank 260 at C1
3			<u>SPOTWELD FIXANT</u>	Same as Tank 458 at C1
7	9.301	961 935 5466	<u>TRI-ACID ETCH</u> Sulfuric acid (H_2SO_4) Chromic acid (CrO_3) Hydrofluoric acid (HF) Dissolved aluminum (Al^{+3})	18.0 5.0 0.8 4.1
9	9.45	1453	<u>ALODINE 1200 CONVERSION COATING</u>	Same as Tank 268 at C1
14		957	<u>ALUMINUM REMOVAL</u> Sodium hydroxide (NaOH) Triton X-100 Isoprep	Need MSDS Need MSDS
17	3.317 (TYP.)	673	<u>FINGERPRINT NEUTRALIZER</u>	Same as Tank 327 at C1
19		954 956	<u>FLUX NEUTRALIZER</u> Sodium carbonate (Na_2CO_3) Sodium dichromate ($Na_2Cr_2O_7$)	4.7 0.9
20		1344	<u>SPRAY ALKALINE CLEAN</u> Oakite 161 Sodium metasilicate (Na_2SiO_3) Tetrasodium phosphate ($Na_4P_2O_7$)	Need more detailed MSDS
21		6064	<u>TURCO AIRLION</u>	Same as Tank 460 at C1
24	9.07		<u>PASSIVATION</u>	Same as Tank 488 at C1
26	9.29		<u>TITANIUM PICKLE</u>	Same as Tank 483 at C1
27	9.07		<u>NITROPICKLE</u>	Same as Tank 485 at C1
30	9.07	948	<u>PASSIVATION</u> Nitric acid Metal oxides	21.1
40		3081	<u>STEEL PHOSPHATING</u> Granodine 313F	Need MSDS

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
41		2991	<u>ACIDULATED RINSE</u> DeoxyTite 10	Need MSDS
45	9.28	3689	<u>CHROMATE CONVERSION COATING</u> Cad Coat 50 Chromic acid (CrO_3) Ammonium nitrate (NH_4NO_3) Fluorinated wetting agent(FC-95)	Need MSDS 1.6 3.1 0.01
46	9.69		<u>COPPER BRITE DIP</u>	Same as Tank 303 at C1
47	9.69		<u>COPPER PLATE</u>	Same as Tank 316 at C1
48	9.69	5785	<u>COPPER STRIPPER</u>	Same as Tank 321 at C1
50	9.28		<u>CADMIUM PLATE (NONBRIGHT)</u>	Same as Tank 312 at C1
52	9.74	2298 2298-1	<u>IRIDITE #1 CHROMATE DIP</u>	Same as Tank 314 at C1
56	9.74		<u>CADMIUM PLATE (BRIGHT)</u>	Same as Tank 313 at C1
57	9.28 9.74	955	<u>CYANIDE DIP</u>	Same as Tank 311 at C1
59	9.74	939	<u>ACID DIP</u>	Same as Tank 309 at C1
61			<u>ELECTROCLEANER</u>	Same as Tank 308 at C1
62		950-5	<u>DESCALER</u> Turco descaler	Need more detailed MSDS
64	9.28 9.74	926	<u>CADMIUM STRIPPER</u>	Same as Tank 305 at C1
65	9.74		<u>CADMIUM PLATE</u>	Same as Tank 313 at C1
66	9.74		<u>CADMIUM PLATE</u>	Same as Tank 313 at C1

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
67	9.301 (TYP.)	518	<u>SOLVENT WASH</u>	Same as Tank 1201 at C1
69			<u>NEUTRALIZING RINSE</u>	Same as Tank 315 at C1
72	9.86		<u>TIN PLATE</u>	
		950-36	Potassium stannate ($K_2Sn(OH)_6$)	10.9
		950-35	Potassium hydroxide (KOH)	2.7
		941	Hydrogen peroxide (H_2O_2)	0.02
74	9.68		<u>SILVER PLATE</u>	
		950-31	Silver cyanide (AgCN)	3.4
		950-30	Potassium cyanide (KCN)	8.4
		950-29	Potassium carbonate (K_2CO_3)	1.8
		950-35	Potassium hydroxide (KOH)	2.4
		1171	Lume "A"	0.9 (Need MSDS)
		1171-1	Lume "B"	0.9 (Need MSDS)
75	9.68		<u>SILVER STRIKE</u>	
		950-31	Silver cyanide (AgCN)	0.4
		950-30	Potassium cyanide (KCN)	7.3
76			<u>NICKEL STRIKE</u>	Same as Tank 343 at C1
77			<u>NITRIC ACID DIP</u>	
		948	Nitric acid (HNO_3)	1.9
78			<u>NEUTRALIZING RINSE</u>	
		935	Chromic acid (CrO_3)	Same as Tank 319 at C1
83		1604	<u>HEAT TREAT SALT</u> Draw temperature 275	Need MSDS
109	3.317 (TYP.)	673	<u>FINGERPRINT NEUTRALIZER</u>	Same as Tank 327 at C1
110			<u>ETCHANT</u>	
		948	Nitric acid (HNO_3)	4.7
111			<u>ETCHANT</u>	
		939	Hydrochloric acid (HCl)	2.2
140	9.301 (TYP.)	980	<u>ALUMINUM ALKALINE CLEANER</u>	Same as Tank 260 at C1

TANK	DPS	DPH	SOLUTION/INGREDIENTS	WEIGHT %
144		1234	<u>STEAM CLEANER</u> Oakite 94 Sodium tripolyphosphate ($\text{Na}_5\text{P}_3\text{O}_{10}$) Sodium metasilicate (Na_2SiO_3) Sodium carbonate (Na_2CO_3) Dodecylbenzenesulfonic acid	1.0 1.0 0.8 0.2
145		5204-10	<u>VIBRA BURR</u> Vibra Burr Compound	Need MSDS
146	9.301 (TYP.)	518	<u>SOLVENT WASH</u>	Same as Tank 1201 at C1
152	9.301 (TYP.)	518	<u>SOLVENT WASH</u>	Same as Tank 1201 at C1
162B			<u>QUENCH</u> Jo-Quench P-52 Ethylene glycol ($\text{C}_2\text{H}_6\text{O}$)	Need MSDS
176		5852	<u>TURCO 4215 CLEANER</u>	Same as Tank 418 at C1
179	9.05	948	<u>PASSIVATION</u>	Same as Tank 30 at C6
181	9.301		<u>1051 ETCH</u>	Same as Tank 262 at C1
183	9.45	1453	<u>ALODINE 1200 CONVERSION COATING</u>	Same as Tank 268 at C1
185	9.45	5089	<u>ALODINE 1500 CONVERSION COATING</u>	Same as Tank 270 at C1
187		5668	<u>ULTRASONIC CLEANER</u> Bendix Diritum 603	Need more detailed MSDS
190		5852	<u>TURCO 4215 CLEANER</u>	Same as Tank 418 at C1
193	9.301		<u>1051 ETCH</u>	Same as Tank 262 at C1
195	11.01	935	<u>ANODIZE</u>	Same as Tank 370 at C1
197	11.01	956-1	<u>ANODIC SEAL</u>	Same as Tank 368 at C1

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
201		980	<u>TURCO 4090</u>	Same as Tank 260 at C1
203	9.301-2		<u>1051 ETCH</u>	Same as Tank 262 at C1
206	9.481-2	DMS 1863	<u>ALUMINUM CHEM MILL DACo.#4L</u> Sodium hydroxide (NaOH) Sulfur (S ₈) Dissolved aluminum (Al ⁺³)	11.2 4.5
207	9.481-2	DMS 1863	<u>ALUMINUM CHEM MILL DACo.#4L</u> Sodium hydroxide (NaOH) Sulfur (S ₈) Dissolved aluminum (Al ⁺³)	11.2 4.5
208		DMS 1863	<u>DACo.#4L CONCENTRATE</u> Sodium hydroxide (NaOH) Sulfur (S ₈)	25.0 10.5
209	9.481-2	5983 948	<u>ALUMINUM DESMUT</u> Turco Smut-Go Nitric acid (HNO ₃)	Need more detailed MSDS
211		5879-4	<u>CHEM MILL MASKANT</u> Adcoat AD 814-C	Need MSDS
212	9.481-2	DMS 1863	<u>ALUMINUM CHEM MILL DACo.#4L</u>	Same as Tank 206 at C6
213		957-1	<u>LIQUID CAUSTIC STORAGE</u> Sodium hydroxide (NaOH)	50.0
220	5.00-6	950.8	<u>HEAT TREAT SALT</u> Perlton	Need more detailed MSDS
221		1604	<u>HOUGHTON DRAW TEMP. 275</u>	Same as Tank 329 at C1
240		982	<u>ELECTROCLEANER</u> Wyandotte FS	Same as Tank 308 at C1
243		939 292	<u>ADAPTER STRIPPER</u> Hydrochloric acid (HCl) Rodine 50	Need more detailed MSDS
244	9.71	935	<u>REVERSE ETCH</u> Chromic acid (CrO ₃)	23.0

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
245	9.71	935	<u>CHROMIUM PLATE</u>	
		961	Chromic acid (CrO_3)	31.7
			Sulfuric acid (H_2SO_4)	0.6
249	9.71	957	<u>CHROMIUM STRIP</u>	
			Sodium hydroxide (NaOH)	5.8
250	9.71	961	<u>ACTIVATION</u>	
			Sulfuric acid (H_2SO_4)	41.0
252	9.481-2	957	<u>ALUMINUM CHEM MILL #17L</u>	
		6008	Sodium hydroxide (NaOH), 50% TFE #3	Need more detailed MSDS
			Sodium hydroxide (NaOH)	
			Sodium hydrosulfide (NaHS)	
			Sodium polysulfide (Na_2S_x)	
			Sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$)	
		6006	Triethanolamine ($\text{C}_6\text{H}_{15}\text{N}$)	
		6007	TFE #4 Defoamer	Need MSDS
254	9.481-2		<u>ALUMINUM DESMUT</u>	Same as Tank 209 at C6
257	9.481-2		<u>ALUMINUM CHEM MILL DACo. #4L</u>	Same as Tank 206 at C6
258A		DMS 1863	<u>DACo. #4L CONCENTRATE</u>	Same as Tank 208 at C6
258B		957-1	<u>LIQUID CAUSTIC STORAGE</u>	Same as Tank 213 at C6
259		DMS 1863	<u>SPENT ETCH STORAGE</u>	Need MSDS
260		5204-9	<u>VIBRATORY DEBURR</u> VF-77	Need MSDS
261		5204-9	<u>VIBRATORY DEBURR</u> VF-77	Need MSDS
320	11.05	961	<u>SULFURIC ACID ANODIZE</u>	
			Sulfuric acid (H_2SO_4)	15.0
322	11.05	956	<u>DICHROMATE SEAL</u>	
			Sodium dichromate ($\text{Na}_2\text{Cr}_2\text{O}_7$)	5.9
330	9.301		<u>1051 ETCH</u>	Same as Tank 262 at C1

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
332			<u>ANODIC STRIPPER</u>	
		935	Chromic acid (CrO_3)	2.0
		951	Phosphoric acid (H_3PO_4)	4.8
334	9.301 (TYP.)	9.80	<u>ALUMINUM ALKALINE CLEANER</u>	Same as Tank 260 at C1
337	9.64		<u>ELECTROPOLISH</u>	
		961	Sulfuric acid (H_2SO_4)	14.5
		951	Phosphoric acid (H_3PO_4)	57.3
			Dissolved iron, chromium, and nickel ($\text{Fe}^{+3}, \text{Cr}^{+6}, \text{Ni}^{+2}$)	
338	9.64		<u>ELECTROPOLISH</u>	
		961	Sulfuric acid (H_2SO_4)	14.5
		951	Phosphoric acid (H_3PO_4)	57.3
			Dissolved iron, chromium, and nickel ($\text{Fe}^{+3}, \text{Cr}^{+6}, \text{Ni}^{+2}$)	
342	9.07		<u>PASSIVATION</u>	
		948	Nitric acid (HNO_3)	52.6
			Metal oxides	
347			<u>MAGNETIC PARTICLE INSPECTION</u>	Need more detailed MSDS
		5645	Kerosene, base oil "C"	
			Parafins	98.0
			Aromatics	2.0
349			<u>TITANIUM ETCH</u>	
		5466	Hydrofluoric acid (HF)	10.6
		935	Chromic acid (CrO_3)	11.0
			Dissolved titanium (Ti^{+4})	2.2
400			<u>PASSIVATION</u>	Same as Tank 342 at C6
401			<u>PAINT STRIPPER</u>	Need more detailed MSDS
		3398	Leeder 263-W	
			Methylene chloride (CH_2Cl_2)	40.0
			Formic acid (CH_2O_2)	12.0
			Phenol ($\text{C}_6\text{H}_6\text{O}$)	23.0
403			<u>DRY LUBE STRIPPER</u>	
		935	Chromic acid (CrO_3)	31.3
510	9.301 (TYP.)	518	<u>SOLVENT WASH</u>	Same as Tank 1201 at C1
511	3.317 (TYP.)	673	<u>FINGERPRINT NEUTRALIZER</u>	Same as Tank 327 at C1

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
512		665	<u>CORROSION PREVENTIVE</u> MIL-C-16173, Grade 2	Need more detailed MSDS
513		667-1	<u>CORROSION PREVENTIVE</u>	Same as Tank 545 at C1
514		5531	<u>HOT DIP</u> Maskcoat #2 Cellulose Acetate Butyrate (C ₁₄ H ₂₀ O ₈) Castor oil Wax	Need more detailed MSDS
520	3.317 (TYP.)	673	<u>FINGERPRINT NEUTRALIZER</u>	Same as Tank 327 at C1
521	3.317 (TYP.)	673	<u>FINGERPRINT NEUTRALIZER</u>	Same as Tank 327 at C1
522		5531	<u>HOT DIP</u>	Same as Tank 514 at C6
523		665	<u>CORROSION PREVENTIVE</u>	Same as Tank 512 at C6
530		665	<u>CORROSION PREVENTIVE</u>	Same as Tank 512 at C6
549		5645	<u>MAGNETIC PARTICLE INSPECTION</u>	Same as Tank 347 at C6
554	4.713 4.738-2	5961	<u>ULTRASONIC INSPECTION TANK</u>	Same as Tank 5209 at C1
555		DMS 1908	<u>FLUORESCENT PENETRANT</u>	Same as Tank 560 at C1
558		5645	<u>MAGNETIC PARTICLE INSPECTION</u>	Same as Tank 347 at C6
560		5735	<u>DEEP FREEZE QUENCH</u>	Need MSDS
606		329	<u>HOUGHTON #2 QUENCH OIL</u>	Same as Tank 333 at C1
680		329	<u>HOUGHTON #2 QUENCH OIL</u>	Same as Tank 333 at C1

TANK	DPS	DPM	SOLUTION/INGREDIENTS	WEIGHT %
684		329	<u>HOUGHTON #2 QUENCH OIL</u>	Same as Tank 333 at C1
804		329	<u>HOUGHTON #2 QUENCH OIL</u>	Same as Tank 333 at C1
6701		5852	<u>TURCO 4215 CLEANER</u>	Same as Tank 418 at C1
6703			<u>ALUMINUM ETCH</u>	
		961	Sulfuric acid (H_2SO_4)	23.7
		956	Sodium dichromate ($Na_2Cr_2O_7$)	3.2